

discharge. Has nature provided any lightning-rods? What is St. Elmo's fire? What is the velocity of electricity? Illustrate its instantaneousness. Explain the action of the Voss electrical machine.

Name some of the effects of frictional electricity—(1) Physical, (2) Chemical, (3) Physiological. How are voltaic electricity and chemistry related? Why is voltaic electricity thus named? Tell the story of Galvani's discovery. What was his theory? Give an account of Volta's discovery. How can we form a simple pile? Describe the simple voltaic circuit.

Define the poles. Electrodes. Closing and breaking the circuit. What is necessary to form a voltaic pair? Describe the chemical change. Why does the hydrogen come off from the copper? Tell what you can about the current.

What really passes along the wire? How is this force transmitted? Will a tube, then, convey as much electricity as a rod? Explain the term electric potential.

Describe Smee's battery. Grove's battery. The chemical change in this battery. What are the advantages of Grove's battery? Describe Bunsen's battery. Daniell's battery. The Potassium Bichromate battery. Compare frictional and voltaic electricity.

State the effects of voltaic electricity, (1) Physical—heat and light; (2) Chemical—decomposition of water, electrolysis, electro-plating, electro-plating, etc.; (3) Physiological.

What is the effect of a voltaic current on a magnetic needle? What is a galvanometer? An electro-magnet? Show how a coil can be magnetized. How are bar-magnets made? Describe the magnetic telegraph. How is a message sent? How is one received? What is a sounder? What is the general principle of the telegraph? Describe the relay. Name the use of each instrument. Describe a magneto-electric machine. Describe Wilde's machine. What are induced currents? Describe the Telephone. The Microphone. What is the difference between the acoustic and the magnetic telephone? Explain Ruhmkorff's coil. Thermal electricity. A thermo-electric pile. Describe the electric fish.

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*Lights, cannot be separated
as much as space, etc.*

*Tell me not in mournful
numbers that life is but an
unfeeling dream and the soul
is paid that slumber,
They are not as they seem
There were*



*"I know not care not
If guilt is in thy heart
I but know that I love
the whatain thou art"*

*"From my heart there is gone
a brightness & from my life
there is gone a brightness."
Gather your good deeds while
you may, old time is still
flying, and that same frown
that is living to-day
to-morrow will be dying
& May thy life be with such
memory filled, as the rose
in whist years has once been
distilled; you may beat, you
may spall, the rose of life
will be the same to the*

As the higher we go, the
air becomes lighter,
the air is rarified.

All that much remains

Mary Farrell.

It must be known to be
to part, is the said, said fact
of a school-girl's heart.

Metal is a better conductor
than iron.

This in reality means
body.

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